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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 09/15/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/769,211

Applicant(s)

CHUNG ET.AL.

Examiner

Julian A. Mercado

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-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 10-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 27, 2003 has been entered.

Remarks

Claims 1 and 3-22 are pending, of which claims 20-22 are newly submitted.

The rejection of claims 1 and 3-14 under 35 U.S.C. 102(b) based on Donelson (WO 98/57384) has been withdrawn. The examiner concedes with applicant's submission that the compression force for sealing the cell provided for by compression member [32] is by "some other stack component".

The rejection of claims 10-13 under 35 U.S.C. 103(a) based on Faita et al. has been withdrawn. Upon further consideration, Faita et al. does not teach or at least suggest a single pair of openings in the outer interconnect plates. Subsequently thereto, the rejection of claim 14 under 35 U.S.C. 103(a) based on Faita et al. and Akiyama et al. has also been withdrawn.

Specification

The disclosure is objected to because of the following informalities:

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On page 7 at line 25, it is suggested to change "pavis" to --pairs-- and "pluriality" to --plurality--.

Appropriate correction is required.

Claim Objections

Claims 20-22 are objected to because of the following informalities:

In each of claims 20-22 in line 1, it is suggested to change "cutaway" to --cut-away-- as a matter of consistency with the other claims similarly reciting this feature.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 5-7, 9, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Warszawski et al. (U.S. Pat. 4,590,135).

Regarding independent claims 1 and 5 and dependent claims thereto as further noted, Warszawski et al. teaches a fuel cell stack having gas flow distribution means for fuel flow [28] and oxidant flow [35]. (Figures 11, 12, 14, col. 6 line 21-35) Figure 13 shows that these openings are in alignment and with interconnect plates [31'] and [31''] having one side having flow channels [24'] and [24''], respectively. (Figure 13, col. 8 line 7-14, also applies to dependent claims 6, 7, 9)

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The fuel cell is comprised of an anode [1], a cathode [2] and an electrolyte [64]. Figure 6 shows that the fuel cell electrodes [1] and [2] are mounted along its peripheral surface within an aperture or orifice [4] and on respective cut-away sections [70] and [60] defined by frames or plates [3] and [55], “the portion of the frame 3 which delimits the central orifice 4 and against which the cathode 2 is pressed includes a set-back 60 for receiving the cathode 2 in such a manner that *the cathode does not stand proud of the rest of the face 72* after the assembly has been pressed together”, “the other face 56 of the frame 55 against which the anode 1 is pressed does have a set-back portion 70 around the central orifice for receiving the anode in such a manner that *in the assembled cell, the anode 1 does not stand proud of the remainder of the face 56*”. (col. 5 line 13-39, emphasis in italics, also applies to dependent claim 3) As the assembled cell lies wholly within the set-back portions, the cutaway sections completely receive the fuel cell. (applies to dependent claims 20 and 21) The fuel cell is mounted and sealed via a sealant such by that which is used in gluing. (col. 8 line 15-18, applies to dependent claim 3)

Additionally, in independent claim 5, the examiner notes that the instant “cell casing/holder plate” in which the fuel cell is positioned does not preclude multiple cell casing/holder plates such as the plates [3] and [55] taught by Warzawski et al., and to this extent (since the plates [3] and [55] are identical components) the surface sealing of the fuel cell along respective rim sections [70] and [60] thereof is independent of other stack components. If applicant intends to exclude multiple cell casing/holder plates it is suggested to insert --a single-- before “cell casing/holder plate” in line 3 of independent claim 5. For similar reasons, in independent claim 15 the instant “bottom plate having a pair of spaced openings in one end section” does not preclude two pairs of spaced openings. If applicant intends to claim,

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exclusively, the single pair of openings in each of the end plates as shown in Figure 1 of the instant application, it is suggested to insert --single-- before “pair” in lines 2 and 11.

Alternatively, it is suggested to amend independent claim 15 so that its scope is modeled after dependent claim 10, which recites “only a single pair of openings”.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Claims 1 and 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faita et al. (U.S. Pat. 5,482,792).

The rejection is maintained for the reasons of record and for the additional reasons to follow in view of applicant's salient arguments.

The present amendment to independent claim 1 recites that the means for mounting and surface sealing the cell is independently from other stack components. Faita et al. is maintained to teach that the mounting of the cell is independent of other stack components as shown in Figure 1. In Figure 1, it is shown that the fuel cell, comprised of electrodes [7] and membrane [6], is sealed via identical gasket frames [8].

Regarding independent claim 5, as discussed in a prior Office Action, in Faita et al. the fuel cell is mounted in the cell casing/holder plate on a surface of a rim section [13], i.e. a cut-away section adjacent the aperture defined therein. (Figure 3, col. 6 line 48-56) As to the fuel cell being positioned in the cut-away section and surface sealed to a surface of the rim, the fuel cell is considered to be surface sealed via the “intrinsic resiliency of each gasket-

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frame/membrane pair”. (col. 6 line 38-46) As to this surface sealing being independent of other stack components, as discussed in the immediately preceding paragraph the surface sealing is independent of *other* stack components since the sealing is via *identical* gasket frames.
(emphasis added)

Response to Arguments

Applicant's arguments filed with the present amendment have been fully considered but they are not persuasive.

The examiner notes applicant's assertive emphasis on the instant “...*means for mounting and surface sealing a cell independently from other stack components*”. (emphasis as submitted) However, for the reasons discussed above, in reply the examiner asserts that “other stack components” do not preclude *the same stack component* from being part of the means for mounting and surface sealing. (emphasis added) While applicant further argues that “the cell casing/holder plate alone cradles and supports the cell independent of other stack components” (emphasis as submitted) and that “a single gasket frame is not capable of receiving the complete cell”, the examiner notes that the scope of the present claims do not specifically require a singular casing/holder plate, thus, as in *Faita et al.*, duplicate casing/holder plates such as the gasket frames [8] are considered to read on the instant limitation.

The examiner notes that contrary to applicant's assertion, the language “completely recessed” is not included in claims 3 and 7.

Arguments against *Akiyama et al.* and *Donelson* are deemed moot, as the grounds of rejections based on these references have been withdrawn.

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Allowable Subject Matter

Claims 10-19 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record and to the examiner's knowledge do not teach or render obvious the instant invention regarding, in a first embodiment, a single pair of openings in the outer interconnect plates forming the stack of fuel cells (as recited in dependent claim 10), and regarding, in a second embodiment, a plurality of fuel cells positioned in a corresponding one cell casing/holder plate, i.e. a single cell casing/holder plate (as recited in independent claim 15).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511.


The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Jan



Patrick Ryan
Supervisory Patent Examiner
Techno